

## **REMARKS**

Claims 1, 2, 8, 9, 19, 26-29, 31, 32, 36, 37, 46, and 53-74 have been amended. Claims 1-74 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

### **Objection to the Specification:**

The Office Action objected to the specification as failing to provide proper antecedent basis for the claimed subject matter, specifically for the claimed computer-accessible medium as recited in claims 53-74. Applicant has amended claims 53-74 to recite a “computer-readable storage medium.” Support for “computer-readable storage medium” may be found in the specification at page 240, lines 1-9 and page 245, lines 25-30.

Thus, Applicant respectfully requests removal of the objection to the specification in regard to claims 53-74.

### **Section 112, Second Paragraph, Rejection:**

The Office Action rejected claims 1-74 under 35 U.S.C. § 112, second paragraph, as indefinite. The Action rejected the claims because of insufficient antecedent bases for the limitations “one or more tiers” and “one or more layers” in claims 1, 27, 31, and 53. Claims 1, 27, 31, and 53 have been amended to recite “two or more tiers” and “two or more platform layers.”

Thus, Applicant respectfully requests removal of the § 112 rejection of claims 1-74.

## **Section 101 Rejection:**

The Office Action rejected claims 26-30 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. The elements of claim[s] 26-30 are all expressed as means for performing a specified function. Applicant reminds the Examiner that under 35 U.S.C. § 112, paragraph 6:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of underlying structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. (emphasis added)

Thus, by statutory definition, the means claim specifically includes structure and cannot be construed as software *per se*. Examples of the structure as described in the specification include a processor(s) and/or computer-readable medium/media storing program instructions executable to perform the functions recited in the means claims.

Therefore, for at least the reasons presented above, the § 101 rejection of claims 26-30 is improper and removal thereof is respectfully requested.

The Office Action rejected claims 31-52 under 35 U.S.C. § 101 as allegedly not falling within one of the four statutory categories of invention. Applicant respectfully traverses this rejection. However, to expedite prosecution, claim 31 has been amended to recite one or more computer devices performing identifying..., translating..., categorizing..., organizing..., modifying..., and applying....

Thus, for at least the reasons above, Applicant asserts that amended claims 31-52 are statutory under 35 U.S.C. § 101, and removal of the § 101 rejection thereof is respectfully requested.

The Office Action rejected claims 53-74 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claims 53-74 have been amended to recite a computer-readable storage medium, and not a “medium” or a “carrier medium”.

The Examiner states “carrier medium as disclosed on page 245 of the specification which includes non statutory subject matter such as but not limited to signals or transmission media.” These claims have been amended to recite a computer-readable storage medium, thus excluding a carrier medium per the specification. As described in the specification storage media are clearly described in the specification as encompassing tangible, physical articles or objects, (“magnetic or optical media, e.g., disk or CD-ROM, volatile or non-volatile media such as RAM, ROM, etc.”) that store program instructions. Moreover, storage media are clearly differentiated in the specification from “transmission media or signals such as electrical, electromagnetic, or digital signals.”

Thus, Applicant respectfully requests removal of the § 101 rejection of claims 53-74.

### **Section 102(e) Rejection:**

The Office Action rejected claims 1-7, 23, 26-28, 31-35, 50, 53-57 and 72 under 35 U.S.C. § 102(e) as allegedly being anticipated by Carey et al. (U.S. Publication 2004/0225660) (hereinafter “Carey”). Applicant respectfully traverses this rejection for at least the following reasons.

In regard to claim 1, contrary to the Office’s contention, Carey fails to anticipate a system for generating vendor-independent Web Service architectures as recited in claim 1. Carey discloses a selection strategy for “dynamically selecting data of providers by requesters in a coupled environment of requesters and providers” (para. [0001], emphasis added) and for “allowing a requester to select a provider having services with the desired attributes from among a plurality of providers in an environment of coupled requesters and providers” (para. [0008], emphasis added). Carey discloses a web services selection strategy mechanism that selects a provider (e.g, a web service) from among existing providers. Clearly, Carey has absolutely nothing to do with generating web service architectures for implementing web services. In contrast to Carey’s teachings, Applicant’s claim 1 recites a system for generating vendor-independent Web Service

architectures for implementing Web Services. Carey fails completely to disclose or even suggest anything like a system for generating vendor-independent Web Service architectures as recited in Applicant's claim 1.

In further regard to claim 1, contrary to the Office's contention, Carey fails to anticipate program instructions executable to identify one or more logical components for the Web Service architecture according to one or more use case requirements for a specific Web Service. The Examiner relies on paragraph [0031] of Carey to allegedly teach these limitations, asserting Carey "shows a request which identifies the web services based on a business requirement." However, in this paragraph, Carey only describes a web services registry as "a global, public, online directory that allows businesses a uniform way to describe their services, discover other companies' services, and understand the methods necessary to conduct e-business with another company." The paragraph further states that the web services registry "contains listings of providers and each listing contains categories of services provided by each provider; much as does a yellow pages telephone directory" and that the "registry provides an XML interface for allowing a web services requester access to the shared directory and allows publishing of the services of the web services providers." In other words, Carey's registry as disclosed in paragraph [0031] is a component of Carey's web services selection strategy mechanism for selecting a provider (e.g., a web service) from among existing providers listed in the registry. Providers describe existing services in the registry, and requesters may access the registry via requests to discover existing services. This citation is clearly not directed at, and does not teach or suggest, anything like identifying one or more logical components for a Web Service architecture according to one or more use case requirements for a specific Web Service in a process of generating a vendor-independent Web Service architecture for implementing the Web Service as recited in Applicant's claim.

In further regard to claim 1, contrary to the Office's contention, Carey fails to anticipate program instructions executable to translate the one or more use case requirements and one or more technical constraints for the specific Web Service to

determine a plurality of heterogeneous Web Service components for the Web Service architecture. The Examiner asserts Carey “shows each requirement has an associated technical restraint [sic] which uses in the process to identify a component to use,” citing paragraphs [0029] and [0032]-[0034]. As is the case for paragraph [0031], these citations clearly describe aspects of Carey’s web services selection strategy mechanism for selecting a provider (e.g., a web service) from among existing providers. Providers describes existing services in the registry, and requesters may access the registry via requests to discover existing services; paragraphs [0029] and [0032]-[0034] of Carey simply provide a more detailed description of this process. These citations are clearly not directed at, and do not teach or suggest, anything like program instructions configured to translate one or more use case requirements and one or more technical constraints for the specific Web Service to determine a plurality of heterogeneous Web Service components for the Web Service architecture in a process of generating a vendor-independent Web Service architecture as recited in Applicant’s claim.

In further regard to claim 1, contrary to the Office’s contention, Carey fails to anticipate program instructions executable to categorize the Web Service components into two or more related groups according to a vendor-independent Web Service architecture framework. The Examiner contends that Carey “shows the components are categorized by the provided framework” (emphasis added), citing FIG. 3 and paragraph [0034]. In regard to FIG. 3, paragraph [0033] describes the Figure as “a schematic of a service selection process of this invention, wherein a web services requester desires to select one or more services or functions that match the parametrized search strategies of the requester.” Paragraph [0034] describes aspects of Carey’s service selection process as illustrated in FIG. 3. Contrary to the Examiner’s contention, the citations clearly do not teach anything like program instructions executable to categorize Web Service components into two or more related groups according to a vendor-independent Web Service architecture framework. In addition, Applicant notes that claim 1 clearly recites program instructions executable to categorize Web Service components into two or more related groups according to a vendor-independent Web Service architecture framework, and not simply “categorized” components.

Furthermore, FIG. 3 illustrates aspects of Carey's web services selection strategy mechanism for selecting a provider (e.g, a web service) from among existing providers, and paragraph [0034] simply describes aspects of Carey's service selection process as illustrated in FIG. 3. The citations clearly do not teach or even suggest anything like program instructions executable to categorize Web Service components into two or more related groups according to a vendor-independent Web Service architecture framework in a process of generating a vendor-independent Web Service architecture as recited in Applicant's claim.

In further regard to claim 1, contrary to the Office's contention, Carey fails to anticipate program instructions executable to organize the groups of Web Service components in the Web Service architecture according to two or more tiers and two or more platform layers of the Web Service architecture. The Examiner contends that Carey "shows functions or components are organized by level of need and how to provide if not available" (emphasis added), citing FIGs. 4 and 5 and paragraph [0036]. While Applicant traverses the contention that Carey teaches groups of Web Service components organized in the Web Service architecture according to two or more tiers and two or more platform layers of the Web Service architecture, Applicant notes that claim 1 clearly recites program instructions executable to organize groups of Web Service components in the Web Service architecture according to two or more tiers and two or more platform layers of the Web Service architecture, and not simply "organized" functions or components.

Furthermore, contrary to the Examiner's contention, the cited Figures do not show, and paragraph [0036] does not describe, "functions or components are organized by level of need." Instead, the citations only show and describe tables listing requester's priorities for various functions of providers when searching for existing services as part of the web search strategies described by Carey.

In further regard to claim 1, contrary to the Office’s contention, Carey fails to anticipate program instructions executable to modify one or more of the software components according to one or more architecture principles for each of the two or more tiers and the two or more platform layers. The Examiner asserts Carey “shows the components are modified if a required service is not available,” citing paragraphs [0037]-[0040]. After a thorough review of these paragraphs, Applicant can find nothing that teaches or even suggests anything like the limitations as recited in the claim. The paragraphs only describe strategies for handling cases where a provider does not provide a requested function (and do not describe strategies for cases where “a required service is not available”) as part of the web search strategies described by Carey. However, none of the strategies include anything like modifying one or more software components according to one or more architecture principles for each of two or more tiers and the two or more platform layers.

In further regard to claim 1, contrary to the Office’s contention, Carey fails to anticipate program instructions executable to apply one or more Web Services design patterns to the Web Service architecture. The Examiner asserts Carey “shows once functions are complete they are adapted to the application,” citing paragraphs [0037]-[0040]. After a thorough review of these paragraphs, Applicant can find nothing that teaches or even suggests anything like the limitations as recited in the claim. The paragraphs only describe Carey’s web search strategies and have nothing whatsoever to do with applying Web Services design patterns to a Web Service architecture being generated.

In further regard to claim 1, Carey fails to anticipate program instructions executable to provide output indicating the generated Web Service architecture, as recited in amended claim 1.

Thus, for at least the reasons presented above, the rejection of claim 1 is not supported by the cited art and removal thereof is respectfully requested. Similar remarks

as those above regarding claim 1 also apply to claims 31 and 53.

In regard to claim 2, contrary to the Office's contention, Carey fails to anticipate wherein the Web Service architecture is configured for use in implementing the specific Web Service. The Examiner asserts Carey "shows the system is used to provide web services," citing paragraph [0023]. However, Applicant's claims do not recite "providing web services," but instead recite generating a Web Service architecture configured for use in implementing a Web service. In addition, in paragraph [0023], Carey describes a system for the adaptive selection of existing web services. Carey discloses a selection strategy for "dynamically selecting data of providers by requesters in a coupled environment of requesters and providers" (para. [0001], emphasis added) and for "allowing a requester to select a provider having services with the desired attributes from among a plurality of providers in an environment of coupled requesters and providers" (para. [0008], emphasis added). Carey discloses a web services selection strategy mechanism for selecting a provider (e.g, a web service) from among existing providers, and is not at all directed to generating a web service architecture configured for use in implementing a web service. An architecture for implementing a web service is clearly not the same as a system for selecting among existing providers. Moreover, the Examiner appears to be improperly equivocating "providing" with "implementing," when the two terms clearly have distinctly different connotations.

Thus, for at least the reasons presented above, the rejection of claim 2 is not supported by the cited art and removal thereof is respectfully requested. Similar remarks as those above regarding claim 2 also apply to claims 32 and 54.

In regard to claim 26, contrary to the Office's contention, Carey fails to anticipate a system for designing and implementing Web Services comprising heterogeneous components. Carey discloses a selection strategy for "dynamically selecting data of providers by requesters in a coupled environment of requesters and providers" (para. [0001], emphasis added) and for "allowing a requester to select a provider having services with the desired attributes from among a plurality of providers in an environment

of coupled requesters and providers” (para. [0008], emphasis added). Carey discloses a web services selection strategy mechanism that selects a provider (e.g., a web service) from among existing providers, and is not at all directed to designing and implementing web services. In contrast to Carey’s teachings, Applicant’s claim 26 recites a system for designing and implementing web services. Carey fails completely to disclose or even suggest anything like a system for designing and implementing web services as recited in Applicant’s claim 26.

In further regard to claim 26, contrary to the Office’s contention, Carey fails to anticipate a system comprising means for applying a Web Services structured methodology and one or more design patterns to a Web Service architecture to identify heterogeneous components for the Web Service architecture and to organize the heterogeneous components according to the Web Service architecture. The Examiner asserts Carey “shows a methodology and design patterns are used,” citing FIGs. 3-5 and paragraphs [0029]-[0034] and [0036]-[0040]. Claim 26 recites a Web Services structured methodology, and not simply a “methodology,” and Carey is silent in regard to design patterns. Furthermore, while Applicant traverses the Examiner’s contention that Carey teaches a Web Services structured methodology and design patterns as recited in the claim, Applicant notes that claim 26 recites means for applying a Web Services structured methodology and one or more design patterns to a Web Service architecture to identify heterogeneous components for the Web Service architecture and to organize the heterogeneous components according to the Web Service architecture, and not simply a methodology and design patterns.

Furthermore, in regard to FIG. 3, paragraph [0033] describes the Figure as “a schematic of a service selection process of this invention, wherein a web services requester desires to select one or more services or functions that match the parametrized search strategies of the requester.” Thus, this Figure illustrates aspects of Carey’s web services selection strategy mechanism for selecting a provider (e.g., a web service) from among existing providers. Paragraphs [0029]-[0034] describe Carey’s web services selection strategy mechanism for selecting a provider (e.g., a web service) from among

existing providers. Providers describes existing services in a registry, and requesters may access the registry via requests to discover existing services. These paragraphs are clearly not directed at, and do not teach or suggest, means for applying a Web Services structured methodology and one or more design patterns to a Web Service architecture to identify heterogeneous components for the Web Service architecture and to organize the heterogeneous components according to the Web Service architecture in a system for designing and implementing web services as recited in Applicant's claim.

FIGs. 4 and 5 show tables listing requester's priorities for various functions of providers when searching for existing services as part of the web search strategies described by Carey. Paragraphs [0036]-[0040] simply describe these tables and Carey's web search strategies. Applicant can find nothing in these paragraphs that teaches or even suggests anything like the limitations as recited in the claim.

Nothing in the citations, or anywhere else in Carey, anticipates means for applying a Web Services structured methodology and one or more design patterns to a Web Service architecture to identify heterogeneous components for the Web Service architecture and to organize the heterogeneous components according to the Web Service architecture.

In further regard to claim 26, contrary to the Office's contention, Carey fails to anticipate a system comprising means for implementing a Web Service comprising the identified heterogeneous components organized according to the Web Service architecture. The Examiner asserts Carey "shows the system is used to provide web services," citing paragraph [0023]. However, Applicant's claims do not recite "providing web services," but instead recite means for implementing a Web Service comprising the identified heterogeneous components organized according to the Web Service architecture. In addition, in paragraph [0023], Carey describes a system for the adaptive selection of existing web services. Carey discloses a selection strategy for "dynamically selecting data of providers by requesters in a coupled environment of requesters and providers" (para. [0001], emphasis added) and for "allowing a requester to select a

provider having services with the desired attributes from among a plurality of providers in an environment of coupled requesters and providers" (para. [0008], emphasis added). Carey discloses a web services selection strategy mechanism for selecting a provider (e.g, a web service) from among existing providers, and is not at all directed to applying a Web Services structured methodology and one or more design patterns to a Web Service architecture to identify heterogeneous components for the Web Service architecture and to organize the heterogeneous components according to the Web Service architecture, and implementing a Web Service comprising the identified heterogeneous components organized according to the Web Service architecture. An architecture for implementing a web service is clearly not the same as a system for selecting among existing providers. Moreover, the Examiner appears to be improperly equivocating "providing" with "implementing," when the two terms clearly have distinctly different connotations.

Thus, for at least the reasons presented above, the rejection of claim 26 is not supported by the cited art and removal thereof is respectfully requested.

In regard to claim 27, contrary to the Office's contention, Carey fails to anticipate a system comprising means for identifying one or more logical components for the Web Service architecture according to one or more use case requirements for the Web Service. The Examiner relies on paragraph [0031] of Carey to allegedly teach these limitations, asserting Carey "shows a request which identifies the web services based on a business requirement." However, in this paragraph, Carey only describes a web services registry as "a global, public, online directory that allows businesses a uniform way to describe their services, discover other companies' services, and understand the methods necessary to conduct e-business with another company." The paragraph further states that the web services registry "contains listings of providers and each listing contains categories of services provided by each provider; much as does a yellow pages telephone directory" and that the "registry provides an XML interface for allowing a web services requester access to the shared directory and allows publishing of the services of the web services providers." In other words, Carey's registry as disclosed in paragraph [0031] is a component of Carey's web services selection strategy mechanism for selecting a provider

(e.g, a web service) from among existing providers listed in the registry. Providers describe existing services in the registry, and requesters may access the registry via requests to discover existing services. This citation is clearly not directed at, and does not teach or suggest, anything like identifying one or more logical components for a Web Service architecture according to one or more use case requirements for a Web Service in a system for designing and implementing Web Services as recited in Applicant's claim.

In further regard to claim 27, contrary to the Office's contention, Carey fails to anticipate a system comprising means for translating the one or more use case requirements for the Web Service and one or more technical constraints for the Web Service to determine a plurality of heterogeneous Web Service components for the Web Service architecture, wherein the Web Service components include software components. The Examiner asserts Carey "shows each requirement has an associated technical restraint [sic] which uses in the process to identify a component to use," citing paragraphs [0029] and [0032]-[0034]. As is the case for paragraph [0031], these citations clearly describe aspects of Carey's web services selection strategy mechanism for selecting a provider (e.g, a web service) from among existing providers. Providers describes existing services in the registry, and requesters may access the registry via requests to discover existing services; paragraphs [0029] and [0032]-[0034] of Carey simply provide a more detailed description of this process. These citations are clearly not directed at, and do not teach or suggest, anything like translating one or more use case requirements and one or more technical constraints for the Web Service to determine a plurality of heterogeneous Web Service components for the Web Service architecture in a system for designing and implementing Web Services as recited in Applicant's claim.

In further regard to claim 27, contrary to the Office's contention, Carey fails to anticipate a system comprising means for categorizing the Web Service components into two or more related groups according to a vendor-independent Web Service architecture framework. The Examiner contends that Carey "shows the components are categorized by the provided framework" (emphasis added), citing FIG. 3 and paragraph [0034]. In regard to FIG. 3, paragraph [0033] describes the Figure as "a schematic of a service

selection process of this invention, wherein a web services requester desires to select one or more services or functions that match the parametrized search strategies of the requester.” Paragraph [0034] describes aspects of Carey’s service selection process as illustrated in FIG. 3. Contrary to the Examiner’s contention, the citations clearly do not teach anything like a system comprising means for categorizing the Web Service components into two or more related groups according to a vendor-independent Web Service architecture framework. In addition, Applicant notes that claim 27 clearly recites means for categorizing Web Service components into two or more related groups according to a vendor-independent Web Service architecture framework, and not simply “categorized” components.

Furthermore, Fig. 3 illustrates aspects of Carey’s web services selection strategy mechanism for selecting a provider (e.g, a web service) from among existing providers. Paragraph [0034] simply describes aspects of Carey’s service selection process as illustrated in FIG. 3. The citations clearly do not teach or even suggest anything like means for categorizing Web Service components into two or more related groups according to a vendor-independent Web Service architecture framework in a system for designing and implementing Web Services as recited in Applicant’s claim.

In further regard to claim 27, contrary to the Office’s contention, Carey fails to anticipate a system comprising means for organizing the groups of Web Service components in the Web Service architecture according to two or more tiers and two or more platform layers of the Web Service architecture. The Examiner contends that Carey “shows functions or components are organized by level of need and how to provide if not available” (emphasis added), citing FIGs. 4 and 5 and paragraph [0036]. While Applicant does not agree with the Examiner’s contention that Carey teaches groups of Web Service components organized in the Web Service architecture according to two or more tiers and two or more platform layers of the Web Service architecture, Applicant notes that claim 26 clearly recites means for organizing groups of Web Service components in the Web Service architecture according to two or more tiers and two or more platform layers of the Web Service architecture, and not simply “organized”

functions or components.

Furthermore, contrary to the Examiner’s contention, the cited Figures do not show, and paragraph [0036] does not describe, “functions or components are organized by level of need.” Instead, the citations only show and describe tables listing requester’s priorities for various functions of providers when searching for existing services as part of the web search strategies described by Carey.

In further regard to claim 27, contrary to the Office’s contention, Carey fails to anticipate a system comprising means for modifying one or more of the software components according to one or more architecture principles for each of the two or more tiers and the two or more platform layers. The Examiner asserts Carey “shows the components are modified if a required service is not available,” citing paragraphs [0037]-[0040]. After a thorough review of these paragraphs, Applicant can find nothing that teaches or even suggests anything like the limitations as recited in the claim. The paragraphs only describe strategies for handling cases where a provider does not provide a requested function (and do not describe strategies for cases where “a required service is not available”) as part of the web search strategies described by Carey. However, none of the strategies include anything like means for modifying one or more software components according to one or more architecture principles for each of two or more tiers and the two or more platform layers.

In further regard to claim 27, contrary to the Office’s contention, Carey fails to anticipate a system comprising means for applying one or more Web Services design patterns to the Web Service architecture. The Examiner asserts Carey “shows once functions are complete they are adapted to the application,” citing paragraphs [0037]-[0040]. After a thorough review of these paragraphs, Applicant can find nothing that teaches or even suggests anything like the limitations as recited in the claim. The paragraphs only describe Carey’s web search strategies and have nothing whatsoever to do with means for applying Web Services design patterns to a Web Service architecture.

In further regard to claim 27, Carey fails to anticipate a system comprising means for providing output indicating the Web Service architecture for implementing the Web Service, as recited in amended claim 27.

Thus, for at least the reasons presented above, the rejection of claim 27 is not supported by the cited art and removal thereof is respectfully requested.

Applicant also asserts that the rejection of numerous ones of the dependent claims under § 102(e) is further unsupported by the cited art. However, since the rejection has been shown to be unsupported for the independent claims, a further discussion of the dependent claims is not necessary at this time.

### **Section 103(a) Rejections:**

The Office Action rejected claims 8, 36 and 58 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Carey in view of Eibach, et al. (U.S. Publication 2003/0084350) (hereinafter “Eibach”), claims 9, 37 and 59 as allegedly being unpatentable over Carey in view of Park (U.S. Publication 2002/0001295), claims 10-14, 24, 25, 29, 38-41, 51, 52, 60-63, 73 and 74 as allegedly being unpatentable over Carey in view of Curry, et al. (U.S. Publication 2003/0233631) (hereinafter “Curry”), and claims 15-22, 30, 42-49 and 64-71 as allegedly being unpatentable over Carey in view of Upton (U.S. Publication 2003/0105884). However, since the rejection has been shown to be unsupported for the independent claims, a further discussion of these rejections is not necessary at this time.

## **CONCLUSION**

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681-66302/RCK.

Respectfully submitted,

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